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AMERICAN MILITARY READINESS FOR CHEMICAL AND BIOLOGICAL WARFARE: A CRITICAL VULNERABILITY

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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ABSTRACT

There has been a proliferation in the production and sale of chemical weapons, biological weapons and the missiles used to deliver them among potential adversaries of the U.S. As this proliferation continues, the likelihood of an attack against the U.S. is increasing. Despite NCA support for a counter-proliferation initiative, deficiencies in readiness that existed at the time of the Persian Gulf War persist. Continued deficiencies are due to lack of prioritization at the level of the Joint Chiefs of Staff and the CINCs. These deficiencies constitute a critical vulnerability and as such, place the United States at risk of suffering a strategic defeat.

INTRODUCTION

The national security concerns of the United States have undergone significant changes in the years since the dissolution of the Soviet Union. In the past, the risk of nuclear attack was high with mutually assured destruction serving as the most effective defense. Today, the dominant security threat for the United States, as identified by the Clinton administration in the Report on the Bottom Up Review, is the proliferation of chemical and biological weapons and the missile systems designed to deliver them.[1] The extent of the chemical and biological weapons (CW/BW) threat, the response of the National Command Authority (NCA) to this threat, and how the geographic Commanders in Chief (CINCs) are impacted by this effort will be the focus of this paper.

While there has been tremendous legislative support given to CW/BW readiness, in the final analysis, a low level of funding, staffing and mission prioritization by the Joint Staff and the CINCs characterize the current state of affairs. As a result, the United States remains vulnerable to CW/BW attack and may sustain significant losses on the battlefield of the future. The impact of these findings is discussed in terms of operational art.

CURRENT STATE OF CW/BW PROLIFERATION

Currently 24 countries have either been confirmed to have or are suspected to have CW capabilities. Fourteen countries are believed to possess BW programs.[2] Iran, Iraq, Libya, Syria,

Cuba, China and North Korea are all potential U.S. adversaries who have active programs in CW and/or BW. Russia is suspected of maintaining an illegal capability of producing BW.[3,4] Thus it is seen that although the problem of CW/BW is global, it is focused in areas of instability and as such poses a significant threat to United States security.

Because many of the technical capabilities used in the production of these weapons have legitimate domestic and defensive uses, plausible deniability regarding offensive intent is possible for any state engaged in CW/BW production. For the United States, maintaining an accurate assessment of clandestine production is difficult since ingredients are readily accessible, the process is simple and a facility designed to produce BW can be established and disassembled in a matter of weeks, if not days.[5]

The proliferation and sale of missile systems designed to deliver CW/BW warheads poses an added security threat for the United States. Ballistic missiles, which have been the principal means of weapon delivery, continue to undergo modifications expanding their effective ranges of delivery.[6] North Korea's TAEPO DONG 2 missile, currently in development, will have an effective range of 4000 km.[7] Using such a system, Iran would be capable of targeting cities in southern Europe.

Cruise missiles are also undergoing a significant proliferation.[8,9] Although the effective range for cruise missiles is less than that for ballistic missiles, they can be

produced for 10-25% the cost and have the added benefit of pinpoint accuracy provided by Global Positioning System technology.[10] Defense against such missile systems is still in development and as such, inadequate missile defense could be construed as a vulnerability for the United States and its allies.

As was seen in the attack in Tokyo subway system in 1995, an additional area of concern relative to proliferation of CW/BW includes terrorist, paramilitary and insurgent groups. While most such groups do not possess the financial resources to produce sophisticated weapons, crude, assembed weapons are achievable, deployable and potentially devastating. The United States currently braces itself for terrorist activity at the Summer Olympics Games to be held in Atlanta this summer.[11,12]

Many developing nations view CW/BW as force multipliers which are easily obtained or produced. They are also effective as deterrents to regional aggression but have proven to be effective offensive weapons as well.[13] As such, the United States could find itself confronting third world or rogue state adversaries on a battlefield which would be asymetrically skewed by the inability of the United States to respond in kind. In such a setting, the United States could find itself at a strategic, operational and tactical disadvantage.[14]

The threat of CW/BW is very real and it is escalating. No longer is the United States dealing with a single foe who is engaged at the bargaining table and shares an interest in

disarmament. Rather, the threat is from a number of volatile, unpredictable states, some of which have already demonstrated their willingness to use such weapons. The hallmark of successful United States military operations of the future will be geographic CINCs going into battle with forces fully prepared and anticipating enemy assaults using CW/BW. Such a threat will exist whether engaged in a major regional contingency or an operation other than war.

CURRENT UNITED STATES RESPONSE TO CW/BW THREAT

The National Command Authority (NCA) has clearly stated its concern relative to CW/BW in its National Security and National Military Strategies.[15,16] Early in the current administration, then Secretary of Defense Les Aspin capsulized the concern regarding CW/BW when he said that these weapons "may directly threaten our forces in the field and, in a more subtle way, threaten the effective use of those forces."[17] DoD was committed to "ensure that our own force structure and military planning address the potential threat from weapons of mass destruction and missiles around the world."[18]

In a speech to the National Academy of Sciences in December 1993, Aspin established the Defense Counterproliferation Initiative (DCPI), and coined the term "counterproliferation" to be distinguished from the more common verbiage "nonproliferation".[19] In so doing, Aspin was acknowledging that, despite the reassurances of the post Cold War world, proliferation of CW/BW continued. In establishing the DCPI, he

was declaring that the United States was prepared to take active measures to thwart proliferative and offensive activities on the parts of adversaries. No longer would the U.S. passively await an attack.

The DCPI mandates improved weapons detection and destruction capabilities, enhanced ability to conduct military operations in the contaminated environment, increased precision in intercepting new delivery systems, improved capabilities to neutralize the consequences of attack and to deliver technologies to the fighting forces to accomplish the above named taskings.[20] It is clear that the thrust of the DCPI was to prepare the CINC for the CW/BW threat.

In response to the administration's increased commitment to counterproliferation, Congress passed the 1995 National Defense Authorization Act which directed the establishment of the Counter Proliferation Review Committee (CPRC). Comprised of the Secretary of Defense, Secretary of Energy, Director of the Central Intelligence Agency and the Chairman of the Joint Chiefs of Staff, this body was directed to " make recommendations relative to modifications in such programs required to address shortfalls in existing and programmed capabilities" to defend against CW/BW.[21] The CPRC has already been proven to be a key element in the counterproliferation effort.

A plethora of programs have been established to liaise between the CINCs and the Joint Staff to ensure the warfighting components' needs are met in preparing for counterproliferation

efforts.[22] Perhaps the most significant of these was the completion of the Chairman of the Joint Chiefs of Staff Counterproliferation Missions and Functions Study. As a result of this effort, the geographic CINC was given principal responsibility for CW/BW readiness. This change in tasking will be reflected in subsequent revisions of the Unified Command Plan.[23]

An immediately apparent shortcoming in this change in tasking however, is that the CINCs do not control the resources required to conduct the research and development or the training which are inherent in such an effort. They will be challenged to turn to the services for the achievement of these not insignificant goals in order that battle in the age of CW/BW can be waged effectively. Time will be the test of this arrangement.

To insure that the needs of the CINC were reflected in acquisition, the Joint Warfighting Capabilities Assessment (JWCA) Deterrence/Counterproliferation team was established in order to identify and prioritize those areas where mission enhancement was required.[24] The fourteen areas of counterproliferation capabilities prioritized by the CINCs are shown in Table 1.(Appendix A)

In addition to these specific areas of development, several broad categories of focus provide for further expansion of the counterproliferative effort. These include counterforce measures, active defense and passive defense. These areas will

be examined relative to the CINCs' readiness for the CW/BW threat.[25,26,27]

Counterforce programs focus on improving the capability of the CINC to strike at enemy forces prior to their deploying weapons against friendly forces. Relative to CW/BW weapons, counterforce efforts would concentrate on targeting, interdicting and destroying the weapons as well as destroying the supporting infrastructure.[28]

Despite the precision of U.S. weaponry during the Persian Gulf War, a deficiency discovered by enemy forces was the relative impenetrability of hardened underground bunkers.[29] As a result, many of our potential adversaries are today employing underground facilities to produce and store CW/BW[30], a tactical change the United States is having difficulty countering.[31]

Enhanced battlefield surveillance will also be a key aspect of the current CW/BW threat in the potentially clandestine circumstances under which an attack may be launched. The CINC must be capable of identifying and characterizing the CW/BW threat in an expeditious fashion for purposes of targeting, interdiction, planning CW/BW counterforce actions and battle-field damage assessment.[32]

Active defenses are those capabilities of the CINC designed to prevent enemy weapons from reaching their intended targets after they have been deployed. The challenge in developing an effective active defense is that it must counter those qualities of missile systems which make them desirable for our adversaries,

particularly their long distance range and their deployment from mobile launch platforms.[33] The development of such defensive missile systems is the topic of heated public debate and congressional testimony and may prove to be a contentious issue during the 1996 presidential election.[34,35,36,37]

An added challenge relative to active defense is that once an incoming weapon is intercepted and destroyed, the active agent contained in the warhead is released at the point of interdiction. Where the weapon is in its trajectory when it is destroyed will be of obvious political and military import. Efforts will need to be directed toward intercepting weapons while they remain over the launching territory, the so called "boost phase", a capability which may serve a deterrent as well as an active defense role.

An item of note relative to the "boost phase" initiative is that the funding for this defensive missile technology was cut by over 50% in fiscal 1995. The 1995 CRPC Report states "(t)he current funding level of $40 million is not adequate to address the boost phase intercept problem fully."[38] Such funding cuts may be indicative of a troubling trend.

One additional aspect of active defense which will plague the CINC is the issue of collateral damage. The lethality of these weaponized agents is not, in many cases, diminished by the application of a burst of heat as would occur during midair destruction. Hence, active defense measures may simply volatilize agent creating a situation with moral and political as

well as military implications.

Passive defense includes those measures which protect our forces against the effects of CW/BW, and would thus ensure the CINC has a full complement of resources capable of operating in the contaminated environment. Passive measures include those which protect the individual ground soldier, ships, as well as ground facility command centers. Agent detection and identification, protective masks and clothing, and medical measures taken before and after attack are all examples of passive defense measures and if employed in a timely fashion, can essentially neutralize the impact of CW/BW.[39]

During the Cold War, NATO forces became quite adept in conducting operations under conditions of CW/BW attack. "However, the U.S. Army prefers to avoid undertaking prolonged operations in protective chemical gear, owing to the severe limits such equipment places on effectiveness."[40] The wisdom of such logic must be called into question and again may be indicative of a more pervasive problem.

The post Cold War environment amplifies the importance of passive measures for the CINC and the dilemma he'll face in the future. Operations will surely be conducted throughout the world, often in unpredictable if not overtly hostile third world environments. The possibility of CW/BW will need to be considered in every estimate conducted, in every corner of the world and against every potential adversary.

The CINC must likewise be concerned with the coalition

nature of the force of the future. A coalition partner incapable of exercising effective passive defensive measures may prove a liability for the CINC and this will need to be calculated into any force planning.[41]

CW/BW READINESS DEFICIENCIES PERSIST

The experience of the United States military during the Persian Gulf War was sobering. Being generally unprepared for CW/BW attack, most U.S. forces received preparedness training in the desert during the six month build up of Operation Desert Shield. A General Accounting Office (GAO) report issued in January 1991 summarizes the overall dismal state of readiness that existed up to the time of the Persian Gulf War.[42]

A soon to be released GAO report, which serves as an effective follow up to the 1991 report, examines current CW/BW readiness and suggests that many of the deficiencies which existed prior to the Persian Gulf War persist. Based on data collected through February 1996, this report suggests that at the levels of the Joint Chiefs of Staff, CINCs, and individual unit commander, there is a low emphasis in funding, staffing, monitoring and mission priority in issues relating to CW/BW.[43]

None of the Army's crisis response divisions or early deploying Army reserve units were in full compliance with required stocking levels. Funds for such purchases were consistently diverted by unit commanders to meet other higher priorities.[44]

Deficiencies in training identified at the time of the

Persian Gulf War have been met with policy statements and doctrine revisions with little substantive improvement in skills acquisition. Despite the direction provided to the regional CINCs in October 1993 in the Universal Joint Task List issued by the Joint Staff specifying training requirements for CW/BW, only 15% of the joint exercises scheduled for fiscal 1996 contained any element regarding CW/BW. None of these exercises touched on the 23 essential skills identified as crucial to full readiness.[45]

Medical preparedness was similarly found to be lacking. Army medical units had 50-60% of required decontamination supplies available for deployment, much of it outdated. None of the forward deployable units possessed the types of collective shelters required to operate in the contaminated environment. In all cases of the units reviewed, less that 50% of the physicians had received anything but basic training in caring for casualties suffering from the effects of CW/BW and how to administer care in the contaminated environment. Basic skills such as donning masks were found to be deficient.[46]

This study concluded that the deficiencies in CW/BW preparedness persist despite the Persian Gulf experience, because of the inconsistent and low priority DoD places on such issues. This trend was apparent at the Joint Chiefs of Staff and the warfighting CINCs level. Funding for CW/BW issues has been cut 30% with further cuts scheduled. Key positions at the Joint Staff are being eliminated. Other mission types are receiving

priority at the CINC staff level.[47] Joint and CINC staffs identified higher priority taskings, low interest at senior levels, difficulty of performing tasks in protective gear and time consuming nature of CW/BW training as reasons for the relative inattention to CW/BW issues.[48]

This absence of readiness is unsettling. Through the establishment of the DCPI, the NCA has crafted a vision of the post Cold War world which maintains American military supremacy and diplomatic flexibility. If potential adversaries were certain to be major regional powers, the hope for negotiated settlement of disputes would be alive. The current world scene however, is replete with unpredictable if not unstable leaders who could not be relied upon to even enter negotiations, let alone negotiate in good faith.

If a third world power or rogue state with whom the United States had no effective diplomatic relations were to deploy CW/BW, the United States military would find itself ill prepared to protect itself or to respond satisfactorily. Under the stipulation of the 1972 Biological Weapons Convention and the soon to be ratified Chemical Weapons Convention, the United States would be incapable of responding in kind, a restraint which in itself may deflate the deterrent capability of American might.[49]

A rogue state might also penetrate American held space and release an agent surreptitiously so as to achieve plausible deniability. In such a scenario, the United States would sustain

unacceptable casualties without being able to respond.

CW/BW READINESS: A CRITICAL VULNERABILITY

Consideration of the CW/BW threat in terms of operational art demonstrates the urgency of the current situation. Clausewitz defines center of gravity as "the hub of all power and movement, on which everything depends."[50] To defeat an opponents center of gravity assures victory. Centers of gravity can be tangible, as in troop strength or armament capability, or they can be intangible, as in a country's leadership, its will to fight or public support for war.[51]

"Critical vulnerabilities" are those weaknesses which are directly related to the center of gravity and if attacked, would permit access to an adversary's center of gravity. Therefore, the attack against an opponent's critical vulnerabilities would gain access to the center of gravity and would thus constitute a strategy for victory.[52]

As has been clearly demonstrated with the American experience in Viet Nam, and in the aftermath of the Somali ambush, the American public will not tolerate needless casualties. As such, a chemical or biological strike resulting in large numbers of American casualties could decimate the public will and thus negate policy intentions held by the NCA, that is, an adversary could achieve a strategic success. While an American response to such an attack would be a certainty, a response may be muted or restrained lacking firm evidence of a

an adversary could achieve a strategic success. While an American response to such an attack would be a certainty, a response may be muted or restrained lacking firm evidence of a perpetrator or limited by treaty.

For the purposes of the present discussion, the current American military vulnerability to CW/BW attack constitutes a critical vulnerability, exploitation of which would permit access to the intangible center of gravity, the public will, and would thus permit an opponent the opportunity to achieve a strategic victory. It is unlikely of course, that such a victory would be in military terms. However, as recent history has demonstrated, military might does not guarantee success.

It is of a critical urgency then that the United States achieve a satisfactory capability to prevent, deter, protect against and neutralize the threat of CW/BW attack. The administrative support for this effort has been forthcoming but the firm commitment to CW/BW readiness at the Joint Staff and CINC levels has been hampered by excessive mission burden, and by shortages in staffing and funding.

The technologies discussed in this paper are mostly developmental. Acceleration of the fielding of these systems is of the utmost urgency. Only when the United States can effectively defend against CW/BW will the United States be capable of devaluing the possession of these weapons, the first step required to achieve their ultimate elimination.

CONCLUSION

In light of the current analysis, it is apparent that the readiness of American military forces to defend against and respond to a CW/BW attack is deficient. The threat is expanding daily. Its very nature poses a significant strategic, operational and tactical thrteat to United States and its allies. Despite apparent support provided by the NCA, efforts to mount an effective counterproliferative capability on the battlefield are fraught with apparent inefficiencies and inadequacies. This is a result of low prioritization relative to other warfighting needs, including staffing and funding shortages. While it is the CINC who is ultimately charged with combatting CW/BW and who is responsible to ensure readiness, the acquisition of the necessary capabilities he will need to accomplish this readiness is out of his hands and as such potentially derails the counterproliferation effort. This vulnerability to the effects of CW/BW, a critical vulnerability, place the United States in the dubious position of sustaining a strategic setback at the hands of a second rate power.

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APPENDIX A

Table 1. CINCs' COUNTERPROLIFERATION CAPABILITY PRIORITIES*

CINC PRIORITY	CINC's COUNTERPROLIFERATION CAPABILITIES
1	Detection/characterization of CW/BW agents
2	Intercept cruise missiles
3	Defeat underground targets
4	Characterize and identify underground targets
5	Collect and analyze intelligence
6	Passive defense enabling operations
7	Support for operations in NBC environment
8	Biological vaccines
9	Planning and targeting for above ground infrastructure
10	CW/BW agent defeat
11	Detection and tracking of shipments
12	Prompt mobile target kill
13	Support for Special Operations Forces
14	Locate, detect, and disarm CW/BW in CONUS/OCONUS

*Adapted from "Report on Activities for Countering Proliferation" by Counterproliferation Program Review Committee